

CLAIMS

What is claimed is:

1. A standard advanced technology attachment queuing automation circuit, comprising:
  - a first circuit for storing a command from a higher layer;
  - a second circuit for creating a frame information structure (FIS) corresponding to the command, communicating with a transport layer, and transmitting the frame information structure to the transport layer; and
  - a third circuit for decoding the received FIS and taking an appropriate action.
2. The standard advanced technology attachment queuing automation circuit of Claim 1, wherein the command to be executed queue is implemented through software code.
3. The standard advanced technology attachment queuing automation circuit of Claim 1, wherein the command to be executed queue is implemented through hardware.
4. The standard advanced technology attachment queuing automation circuit of Claim 3, wherein the command to be executed queue is implemented as a part of the standard advanced technology attachment queuing automation circuit.
5. The standard advanced technology attachment queuing automation circuit of Claim 3, wherein the command to be executed queue is implemented as separate from the standard advanced technology attachment queuing automation circuit.
6. The standard advanced technology attachment queuing automation circuit. of Claim 1, further comprising a command completion queue.

7. The standard advanced technology attachment queuing automation circuit. of Claim 1, wherein the command completion queue is implemented in software.
8. The standard advanced technology attachment queuing automation circuit. of Claim 1, wherein the command completion queue is implemented in hardware.
9. The standard advanced technology attachment queuing automation circuit. of Claim 8, wherein the command completion queue is a first in first out device.
10. The standard advanced technology attachment queuing automation circuit of Claim 8, wherein the command completion queue is loaded from the standard advanced technology attachment queuing automation circuit.
11. The standard advanced technology attachment queuing automation circuit of Claim 1, wherein the first circuit receives the command from the higher layer through a command to be executed queue.

12. A method for facilitating handshaking between the higher layers of a host device and the lower layers of a host device, comprising:
  - entering a command in a command to be executed queue;
  - retrieving the command via an automation circuit;
  - checking conditions associated with the command; and
  - communicating with a transport layer to perform an action associated with the command.
13. The method of Claim 12, further comprising writing information from the automation circuit to a task file register.
14. The method of Claim 12, wherein the commands are addressed in the command to be executed queue by a tag.
15. The method of Claim 12, wherein the command to be executed queue is implemented as a first in first out circuit.
16. The method of Claim 12, wherein the command to be executed queue is implemented as an array in software.
17. The method of Claim 12, wherein the transport layer sends an indication as to whether the command has been completed to the automation circuit.
18. The method of Claim 17, wherein the automation circuit enters the command and a corresponding tag in a command completed queue.
19. The method of Claim 18, wherein the tag ranges between 0 and 31.
20. The method of Claim 12, further comprising initiating direct memory access

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(DMA) engine programming/activation from the automation circuit.

21. The method of Claim 12, further comprising initiating direct memory access (DMA) engine programming/activation from a target device.